**IN THE DRAWINGS:**

A replacement sheet for Figures 3 and 4 is submitted herewith, wherein no reference numerals are cut-off at the edges.

## REMARKS

In the Office Action dated June 14, 2006, the Examiner stated in Figure 4, the reference numeral 18 at the right side of the page was cut off. The drawing sheet containing Figure 4 in the file of the undersigned representative of the Applicant does not exhibit such a problem, and most likely this occurred in the Patent and Trademark Office file as a result of inaccurate scanning.

A replacement sheet is therefore submitted herewith.

The Examiner also noted that the letter "a: shown in Figures 3 and 4 was not mentioned in the specification. The specification has been editorially amended to add a paragraph wherein "a" is specifically mentioned. Since this paragraph conforms the specification to the drawings as originally filed, and is consistent with numerous other statements in the specification, no new matter is added thereby.

Other editorial changes in the specification, claims and Abstract have been made.

Claims 1-16 were rejected under 35 U.S.C. §102(b) as being anticipated by Misic. This rejection is respectfully traversed for the following reasons.

Each of independent claims 1 and 8 as originally filed claimed an antenna element, or an antenna arrangement, having an auxiliary circuit with controllable tuning elements each having a control state. The claims further stated that the respective control states are selectively controllable so as to produce any of three possible results, namely a radio-frequency excitation current flowing in a sub-section of the auxiliary circuit that leads the excitation current, or an auxiliary current in the auxiliary circuit section that lags the excitation current, or no auxiliary current in the auxiliary circuit section. Claims 1 and 8 as originally filed were intended to mean that

the tunable elements are able to produce any and all of these three possibilities, but obviously not at the same time. In other words, the tunable elements must be capable of causing each of the aforementioned possibilities to occur.

The Examiner stated that the Misic reference discloses a comparable structure, citing Figures 4 and 5, the Abstract, and column 2, line 33 through column 7, line 43. The last citation constitutes the bulk of the entire Misic patent, and therefore Applicant is unable to determine with any degree of specificity the exact structure that the Examiner considers to be capable of producing these results.

In view of the fact that claims 1 and 8 as originally filed listed the aforementioned possibilities as alternatives, the Examiner may have felt justified in broadly interpreting that claim language as being readable on a structure that is capable of producing only one of these possibilities, or only two of these possibilities, but did not necessarily have to be capable of producing all of these alternatives, at respectively different times.

Independent claims 1 and 8 have been amended to make clear that the controllable tuning elements must be operable so as to produce, at respectively different times, *each of* the aforementioned current-flow situations. Without going into the details of the currents that are actually produced in the Misic reference, it is clear, for the reasons discussed below, that the Misic reference is incapable of producing the aforementioned three different states of current flow in the auxiliary circuit.

As noted above, a first possibility or state of current flow is that wherein current is flowing only in the sub-section, but not in the auxiliary circuit. In a second state and in a third state, current flows both in the sub-section and in the auxiliary

circuit. The difference between the second and third states is that in the second state the current in the auxiliary circuit leads the current in the sub-section, and in state three, the current in the auxiliary circuit lags the current in the sub-section.

The Misic reference discloses a birdcage antenna structure having two sub-structures that adjoin each other axially. One of these sub-structures includes PIN diodes, which allow that sub-structure to be coupled or decoupled to the other birdcage structure. This is shown in Figure 4 of the Misic reference, and is explained in the Misic disclosure at column 4, lines 57-65 and column 5, lines 3-13. For the following discussion, Applicant will refer to the sub-structure that can be coupled or decoupled as a supplementary resonator, and the other birdcage structure, that is always active, will be referred to as a base resonator.

As noted above, the subject matter of independent claims 1 and 8 requires that three switching states, or states of operation, must be all achievable, depending on the different control states of the controllable tuning elements. Therefore, the Misic reference could anticipate the subject matter of claims 1 and 8 only if that reference disclosed a switching element that could assume three different switching (control) states, or at least two switching elements that can each assume two switching (control) states. A single control element, that is capable only of binary switching, is physically incapable of switching between three different states.

The Misic reference discloses only a single binary switching element, namely PIN diode 88, per antenna rod. The supplementary resonator is capable only of being coupled to the base resonator or decoupled from the base resonator, by this PIN diode.

It is possible that the uncoupled state in the Misic reference could be equated with the first state noted above, namely wherein current is flowing only in the sub-section but in the auxiliary circuit. Nevertheless, the coupled state cannot be equated with either the aforementioned second state or the third state. The Misic reference does not disclose any information anywhere regarding a phase of the current in the supplementary resonator with respect to the phase of the current in the base resonator. There is therefore no disclosure whatsoever in the Misic reference regarding the current in the supplementary resonator either leading or lagging the current in the base resonator.

Regardless of the lack of a teaching in the Misic reference with respect to a leading or lagging current, the fact that the Misic reference discloses only a binary switching element in each resonator rod means that the Misic reference is physically incapable of assuming all of three different control or switching states.

Of course, the Misic reference discloses multiple PIN diodes in total, however, in each antenna rod there is only one PIN diode. There is not disclosure in the Misic reference to activate the PIN diodes independently of each other, nor is there any reason to do so in the Misic reference. The sole reason disclosed in the Misic reference for the presence of the PIN diodes is to couple or decouple the supplementary resonator from the base resonator. For this purpose, either all of the PIN diodes must be conducting (in the coupled state) or all of the PIN diodes must be non-conducting (in the decoupled state). It would destroy the intended operation of the Misic reference to independently operate the PIN diodes so that some of the PIN diodes were conducting while other PIN diodes were simultaneously non-

conducting. Coupled and decoupled states could not be achieved under such circumstances.

This is also applicable to the Examiner's statements regarding claims 7 and 14, which require second controllable tuning elements that are selectively controllable independently of the first controllable tuning elements. With regard to these claims, the Examiner stated each of the conducting rods 66,.82 and 84 of the coil array 60 in the Misic reference may have its own individual adjustable tuning capacitor. While this may be true, the adjustment of the tuning capacitors has absolutely nothing to do with the switching of the PIN diodes. As noted above, the switching of the PIN diodes serves to either couple or decouple the supplementary resonator from the base resonator. The adjustment of the tuning capacitors, by contrast, serves for tuning the individual rods to the same resonance frequency. Tuning a circuit component to a particular frequency has nothing to do with whether the current flowing through that component leads or lags the current flowing through another component in the circuit.

Applicant therefore submits that the Misic reference does not disclose all of the elements of claims 1-16 as arranged and operating in those claims, and therefore the Misic reference does not anticipate any of those claims.

Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Misic in view Srinivasan. The above discussion regarding the Misic reference is also applicable to this rejection. Since it is physically impossible for the Misic reference, as disclosed, to operate as set forth in independent claim 8 (from which claim 17 depends) and since modifying the Misic reference to make that reference operable in accordance with the subject matter of claim 8 would destroy the intended operation

of the Misic reference, the teachings of Srinivasan are irrelevant. Even if the Misic reference were modified in accordance with those teachings, the subject matter of claim 17 still would not result.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

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